July 29, 1999

Status of 1999 Operations and Plans to Recovery Impacts

State Water Project Impacts

- Exports reduced 324 TAF:
  - 26 TAF for the delta smelt biological opinion objective
  - 6 TAF for AFRP Delta Action #1
  - 57 TAF for AFRP Delta Action #5
  - 235 TAF for delta smelt take

- Storage in Oroville is higher by 112 TAF
  - Reservoir releases were scheduled to increase to support higher exports during June.

Central Valley Project Impacts

- Exports reduced 181 TAF
  - 41 TAF for the delta smelt biological opinion objective
  - 9 TAF for AFRP Delta Action #1
  - 26 TAF for AFRP Delta Action #5
  - 107 TAF for delta smelt take

- Storage in Shasta and storage in Folsom are higher by 103 TAF.

Implication of curtailed exports

- Export reductions resulted in lower San Luis Reservoir storage.

- Higher exports are expected in the fall and winter to recover San Luis Reservoir storage.

Probability of recovery

- Assuming dry hydrology (there is a 90% chance that it will be wetter)...
  - DWR expects to recover SWP SL storage later than originally planned (by the end of January instead of December). Drier hydrology means SWP recovery is either (1) further delayed into 2000, or (2) cannot be accomplished without acquiring additional supplies of water.
  - CVP cannot recover without use of joint point of diversion and upstream releases.

- There is a 40% chance that Interruptible supplies will be reduced by 75 TAF or more.

E-037609

Proposed actions for recovery

- Increase Banks pumping in August and September.
  - Increase allowable inflow to Clifton Court Forebay by 500 cfs.
  - All three temporary ag barriers need to be operated.
  - Requires approval from USACE.
  - Additional pumping capability used to move water from Oroville (estimate 45-60 TAF of additional water could be pumped using this option).

- Acquire water south of the Delta.
  - Shift some demand in Kern County from SWP supply to groundwater.
  - Provides "insurance" against very dry conditions. Could possibly by used to "seed" the EWA.

Other factors to consider

- Federal Court ruling on (b)(2).
- Concerns about potential take of spring-run yearlings in the fall/winter
- Concerns about take of steelhead
- Concerns about take of splittail
- Export reductions due to mitten crabs and weeds at the facilities (August – October)

E-037610

Forecast of SWP Operations (SWP proposed export plan)

Scenario #1: No water purchase - Capture Excess Winter Flows - Eliminates export impacts by the end of Jan 2000

	50% Exceedence							90% Exceedence						Impact
	Apr 17-30	May 1-17	May 17-31	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-00	Feb-00	Mar-00	Summary
SWP Export Impacts	-7 [1]	-25 [1]	-97 [1]	-195 [1]										-324 TAF
SWP Export Makeups								64 [2]	48 [2]		212 [3]			324 TAF
SWP Available Capacity								69 [8]	14 [8]		58 [8]	90 [8]	25 [8]	
Oroville Storage Changes				112 [2]				-64 [2]	-48 [2]					0 TAF
Potential Interruptible Water Impacts											-212 [4]			-212 TAF

Scenario #2: Purchase 50 TAF from Stanislaus for instream uses - Eliminates export impacts by the third week of Jan 2000

SWP Export Impacts	-7 [1]	-25 [1]	-97 [1]	-195 [1]										-324 TAF
SWP Export Makeups								104 [2,6]	48 [2]		172 [3]			324 TAF
SWP Available Capacity								69 [8]	14 [8]		98 [8]	90 [8]	25 [8]	
Oroville Storage Changes				112 [2]	25 [5]	25 [5]		-114 [2,6]	-48 [2]					0 TAF
Stanislaus Water Purchase					25 [5]	25 [5]								50 TAF
Potential Interruptible Water Impacts											-172 [4]			-172 TAF

Scenario #3: Purchase 50 TAF from Stanislaus for instream uses and SWP allowable export capacity increased by 500 cfs in Aug & Sep - Eliminates export impacts by the second week of Jan 2000

SWP Export Impacts	-7 [1]	-25 [1]	-97 [1]	-195 [1]										-324 TAF
SWP Export Makeups						25 [7]	30 [7]	104 [2,6]	48 [2]		117 [3]			324 TAF
SWP Available Capacity								69 [8]	14 [8]		153 [8]	90 [8]	25 [8]	
Oroville Storage Changes				112 [2]	25 [5]	25 [5]		-114 [2,6]	-48 [2]					0 TAF
Stanislaus Water Purchase					25 [5]	25 [5]								50 TAF
Potential Interruptible Water Impacts											-117 [4]			-117 TAF

- Pulse flow period allowable export combined = (Actual Vernalis Flow - 3,500 cfs).
- Base case allowable combined export = 1:1 base Vernalis flow (forecasted May 1999).

1. SWP export impacts equivalent to SWP SL storage reduction.
2. Retained project water in upstream reservoir in June and released in Oct & Nov for export makeup.
3. Capture excess winter flow for export makeup to fill SWP share of San Luis reservoir.
4. Impacts to SWP interruptible contractors deliveries due to delay in filling SWP share of San Luis reservoir.
5. Water backed into upstream storage in July & August 1999 as result of Stanislaus water purchase.
6. Export of water saved in upstream storage as noted in #5 above.
7. Additional SWP Exports attributable to proposed 500 cfs increase in SWP export capacity in Aug and Sep.
8. Use of the remaining SWP pumping capacity requires upstream reservoir releases and is limited by E/I criterion.

E—037611

Forecast of CVP Operations (CVP proposed export plan)

Scenario: CVP impacts is counted as b(2) water - SWP pumps 90TAF for CVC

	50% Exceedence							90% Exceedence						Impact
	Apr 17-30	May 1-17	May 17-31	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-00	Feb-00	Mar-00	Summary
CVP Export Impacts	-20 [1]	-29 [1]	-71 [1]	-61 [1]										-181 TAF
CVP Export @ Banks PP.								21 [3]	19 [3]		50 [3]			90 TAF
CVP Storage Changes				103 [2]				-21 [3]	-19 [3]					63 TAF

1. CVP export impacts equivalent to CVP SL storage reduction.
2. Retained project water in upstream reservoir in June.
3. 90 TAF Cross Valley water exported in Oct, Nov and Jan 2000 (Jan 2000 export comes from excess flows).

List of potential transactions to recover San Luis storage

Bottom line

- This year, provide funding for purchase and "long-term rental" of water, up to **121,000 acre-feet**, located south of the Delta for about **$20.45 million**.

- Annually, spend up to **$5.5 million** for San Joaquin Valley water users to reshedule deliveries to avoid low point problems in San Luis Reservoir.

Summary of potential actions

1. Purchase water from the Kern Water Bank Authority and/or participating districts: About 79,000 acre-feet could be made available for sell from groundwater (assuming extraction begins in August and continues through December). The cost would be $150/AF for a total of $11.85 million.

2. Purchase water from the San Joaquin River Exchange Contractors. The SJREC would sell up to 8,000 acre-feet of groundwater supplies for wildlife refuges south of the Delta. These refuge supplies are normally provided from CVP storage in San Luis Reservoir. At this time, we do not have an estimate of the cost for purchasing this water. If it costs the same as the KWBA purchase ($150/AF), then it would total $1.2 million.

3. Borrow water from water users south of the Delta.

   - Up to 114,000 acre-feet of the water from Kern County could be borrowed from August through November. It would be paid back over a five-year period; this could be accomplished using releases from Friant made during periods of excess flows (called 215 water). The water could be borrowed for $75/AF for a total of about $8.6 million.

   - About 60,000 acre-feet of deliveries, normally made during the summer months, could be rescheduled to the fall. This rescheduling would reduce reliance on San Luis Reservoir storage in the summer months; thus, it would facilitate avoidance of a low point problem. Based on discussions with KCWA in June, the water could be borrowed this year for about $75/AF; total cost would be about $4.5 million. Maintaining options to exercise this action would probably add another $1 million.